

STANDARDS-BASED GRADING (SBG)

HONORS PHYSICS

Michaelsen

Welcome to a new way of looking at your own knowledge and learning! This year, we are going to implement a completely different method, known as “Standards-Based Grading” (SBG) in our Physics classroom. With this method, you will have much more control over your work and your learning.

In a nutshell, the SBG process:

- You are graded on *what you have learned*. You are assessed and given feedback on your learning /performance for given standards.
- If you have difficulty and want to improve, you may remediate and re-assess to improve your grade for a given standard.
- The student is responsible for their learning, and in the SBG process, will become a better, more effective learner.

Why a new system?

- If a student's score is 85% on a test, does that mean they knew 85% of the material, or did they know some parts really well (100%), and other parts, very little (<50%)? Did they actually have 80%, but earned “extra credit”, which may or may not be related to the learning objectives? A traditional test grade does not indicate this.
- What if you thought you knew the material, but you didn't? Or you forgot that you had a test? Or you had an “off” day?
- Also, in a traditional homework, quiz, or test grade, if feedback is given about your errors, it is usually too late to help for that particular assessment. It's done and over with. Too bad.
- Does a student go back and relearn what he/she didn't know? Probably not. (and maybe you need that knowledge for the next topic....)

In SBG, it is clear to the student, parent, and teacher where the student has mastered or not mastered the material, and based on the feedback given, students can remediate and improve their level of learning.

What should a grade represent?

Should it be a points-number game where the points matter, but the learning doesn't?
(if you don't know the answer to that one, please see me!)

The best use of grades should include these ideas:

- A student's grade should reflect *actual learning* of the material.
- A grade should not be a punishment, but rather, feedback to better learning (i.e.—a carrot, not a stick).

If the learning goals are clearly set, and practice opportunities completed, the student can successfully learn the material, even in a course as challenging as Physics!

SBG Process

Standards are clearly defined for each unit. (based on the Honors Physics curriculum).

For example: in the introductory graphing unit, some standards include:

STD#	
C-1	<u>Graphing Rules</u> a. Learn and apply the terms and rules for correct graphing. b. Distinguish “independent” and “dependent” variables for given sets of data.
C-2	<u>Linear Relationships / Slope of graphs</u> a. Determine slope & equation of a linear graph. b. Describe the linear relationship.

You’ll also have an assessment sheet for keeping track of your achievement:

STANDARDS CHECKLIST

#	Standard	Assessment:	(1)	(2)	(3)	(4)	
			_____	_____	_____	_____	
			_____	_____	_____	_____	
			_____	_____	_____	_____	

ASSESSMENTS

Rubric

A rubric will be used to show the level of achievement for each standard.

Each standard is worth 5 points, or a multiple of 5.

(Ex: a really important or challenging standard may be worth 10 or 15 points, 2 or 3 times the 5 point rubric).

5	High achievement. Demonstrates thorough understanding, more than rote learning; <u>can apply and extend concepts</u> . The content of the work is clear and comprehensible. [4.5] – may be given for high level of achievement / understanding, but with minor notation, algebraic or other errors.
4	Good level of understanding, with some errors; content of work unclear in some areas.
3	Demonstrates some basic understanding, but with significant gaps and errors. Work shown is hard to follow.
2	Shows very limited understanding. Ex: May have done some math, but <i>you don’t demonstrate physics understanding</i> . Includes “trial and error” in numbers/equations – demonstrates that you don’t know what to do! Work may be difficult to follow.
1	Attempts the problem / question
0	No attempt made to answer

Smaller (Formative) assessments are quick, short assessments given for a few standards at a time.

- The main purpose is to provide feedback to the student and the teacher about how well the student has mastered the standards so far.
- These assessments may count for a grade, or not.

Cumulative (Summative) assessments (tests) are given at the end of each unit, testing most or all of the standards.

Standards may appear more than once in further assessments as the level of difficulty increases, and the weighted grade value of each standard may vary.

Ex: Quiz on standards 1&2. Next quiz on standards 2,3,4. Standard 2 has been formatively assessed twice, but the level of difficulty may have changed from the first introductory assessment. Standard 2 may also be weighted more than the others (i.e. 10 points instead of 5 points, double the rubric points). If the student has difficulty for a given standard, it is readily apparent.

So, a student's Standards Checklist might look like:

#	Standard	Assessment:	(1)	(2)	(3)	(4)	
C-1	Graphing Rules + Terms		$\frac{3}{9/14/10}$	$\frac{5}{9/12/10}$	—	—	
SK-1	Sig Figs + Units		$\frac{5}{9/14/10}$	$\frac{4}{9/12/10}$	—	—	
C-2	Linear Rel + Slope of Graph		$\frac{4}{9/14/10}$	$\frac{4.5}{9/12/10}$	$\frac{5^{(8)}}{9/12/10}$	—	x 2
C-3	Parabolic Rel + Eq.		$\frac{2}{9/14}$	$\frac{3}{9/14}$	—	—	

$\text{Grade} = (5 + 4 + (5 \times 2) + 3) / 25 = 88\%$

- The grade in the class will be based on the most recent grade on each skill.
- If you didn't do well, you may re-assess (see next section) and improve your grade! Conversely, if you "crammed" but didn't learn and retain a standard, your grade may go down if your performance on that standard drops.
Retention is important!
In Physics, each unit cumulatively builds on the previous one, and it is assumed that you can learn, retain, and further apply the knowledge.

That's what real learning is about. Not points.

Homework

Homework (now called “Practice”) will be checked, but is not graded per se.

- It is important to complete the practice needed to master the content. *Just as you wouldn't go to a sports or music competition without practice beforehand, it is extremely difficult to master Physics without practice.* The intent of this method is to relieve the time pressure of having to get “homework” done in one night, eliminate giving “zeroes” for no homework, and allowing you, the student, the responsibility to complete the practice questions as needed for them to learn the material.
- I may informally survey students on completion and quality of homework, for informational purposes. This can be recorded on the Parent Portal gradebook, to inform students, parents, and the instructor of the level of homework completion.
- Another word about ‘homework’ practice problems: As the result of experience, it is my policy that when we do go over practice problems in class (usually a few selected of the more challenging ones), *a student who has not done the problem may NOT copy it down.* They may sit, listen, and learn, then go home and practice it on their own. Students who have attempted the problem may make corrections. This is not meant to be mean! It prevents the obvious problem of students who do not do the practice problems at all, and just copy in class. It's not that they tried and can't do the work, it's that they don't do the work. A student shouldn't claim to be "struggling" when in fact, they aren't doing any work at all! That is not responsible student work, it is not an effective way to learn, and....it's not fair.
- ** Students beware! If you put off your Physics ‘homework’ in favor of other classes, you will find that the work will pile up into an unmanageable mountain, while at the same time, you are digging yourself into a deep hole. (Just stop and picture that for a moment).
 - Cramming does not work in this class—you will not learn and retain the concepts, and in Physics, the concepts build up. You need to consistently do your ‘homework’, but the day-to-day management of it is under your control.
 - A good guideline: when assigned some problems, start them ASAP in case you have difficulty and need help, and try to complete them within 1-3 days. If you have difficulty, ask for help early.

Don't fall behind!!



Re-assessments:

Students who have had difficulty or have not mastered a standard may re-assess for that standard!!

This is one of the advantages of SBG! You have the opportunity to re-assess, vs. traditional grading where you do not.

You do not have to re-take an entire test that includes things you already know — just focus on the areas that need improvement! It's a beautiful thing.

Re-assessment process:

- The reassessment may consist of a written and/or verbal portion, in which the teacher questions for further understanding.
- The re-assessment does NOT consist of the same missed questions from the previous assessment. What would that prove??!
- The level of difficulty of the re-assessment will reflect the highest level of difficulty that has been studied so far (ie: not the easy problems!).
- In general, 1-2 standards may be re-assessed at a time.
- The re-assessment may not be done right after an extra-help session. The re-assessment is meant to show what you know, not what you can repeat back immediately after a help session!
- You must demonstrate that
 - you have completed all practice problems (if the practice wasn't done, is it any surprise there was difficulty?) No "homework", no re-assessment.
 - you have gotten extra help on the material (from a student or teacher)
 - you have completed extra questions, if any were given.
- Time limit – two weeks** after the original assessment.
(*time period may be changed depending on how the system is working, and the school calendar-end of MP).
- You must sign up with me (the teacher) at least 2 days in advance, using the re-assessment form. (I must have advance time to prepare for and to administer a re-assessment). I must see all completed homework BEFORE the day of the re-assessment (not right before it).
The re-assessment form must include:
 - The standard(s) to be re-assessed and 2 possible dates / times
 - Why you didn't do well the first time around. Be honest. It wasn't because of "little mistakes". If you didn't study, say so.
 - What you have done to re-learn the material since the assessment
- What re-assessment is not:
It is **NOT** an opportunity to "blow-off" a quiz or test to re-take later.
Re-assessment is intended for students who sincerely want to improve their grade and learn the material. It requires extra time and effort on the part of the student (and teacher!) to show the level of mastery of the material.
To help you learn, I'll go the extra mile (or 1.6 km). **BUT SO MUST YOU.**

- The grade: If you improve and learn the material, the original grade will be replaced with the new (better) grade for that standard. Grades are recorded by Standards, not by “Quiz”, etc. Conversely, if you do worse, the grade for that standard will drop, but you can still re-assess.
- There will still be lab activity and project grades, but re-assessments aren’t always possible for these, due to the nature of the activities. You are given plenty of time to work on, review, and get help in these activities, so it is expected that they should meet the standards.
- End-of-marking period time is very stressful and limited, both for students and teachers. Do not put everything off until then, when it can’t be scheduled.

It is my hope that this method will work successfully for students in Honors Physics. Physics is a challenging subject, and it is my sincere desire that students learn and appreciate it. I also recognize that students in Honors Physics have heavy workloads in terms of courses and extra-curricular activities, and I hope that this method will help alleviate some of the pressure, while still encouraging students to be responsible in learning the material.

This method is new for this year, and it is a work in progress. Some parts of this method may be altered to improve its effectiveness, both in the interest of the student and the teacher.

If you have any questions, please ask me!

Nancy Michaelson

Please sign and return to instructor ASAP.

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I have read and understood the Standards-Based Grading procedures and Classroom Expectations for Honors Physics

**Student**

Name (print) \_\_\_\_\_

Signature \_\_\_\_\_

Date \_\_\_\_\_

**Parent/Guardian**

Name (print) \_\_\_\_\_

Signature \_\_\_\_\_

Date \_\_\_\_\_

Please sign and return to instructor ASAP.

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